UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/024,243	12/21/2001	Yoshiro Shiokawa	111522	3419

25944 7590 08/05/2004

OLIFF & BERRIDGE, PLC
P.O. BOX 19928
ALEXANDRIA, VA 22320

EXAMINER	
JOHNSTON, PHILLIP A	
ART UNIT	**PAPER NUMBER**
2881	

DATE MAILED: 08/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/024,243	SHIOKAWA ET AL.	
	Examiner	Art Unit	
	Phillip A Johnston	2881	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11-07-2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☒ Claim(s) *1-8* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 December 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
4) ☒ Interview Summary (PTO-413) Paper No(s). *10-29*.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Detailed Action

1. This Office Action is being submitted in response to an amendment filed 11-17-2003, prior to the mailing of the Final Office Action on 12-19-2003.

2. The amendment filed 11-17-2003 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states, that no amendment shall introduce new matter into the disclosure of the invention. The added material in the amended claims, which is not supported by the original disclosure is as follows: " third body gas".

Applicant is required to cancel the new matter in the reply to this Office Action.

Claims Rejection – 35 U.S.C. 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-8 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The term

"third body gas" is not contained in the specification and therefore constitutes new matter.

Claims Rejection – 35 U.S.C. 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-10 as amended are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,566,652 to Kato, in view of Kato, U.S. Patent No. 6,008,490 and in further view of Sato, U.S. Patent No. 5,194,739, for the reasons given in the Final Office Action mailed 12-19-2003.

Examiners Response to Arguments

7. Applicant's arguments filed 11-17-2003 have been fully considered but they are not persuasive.

Argument 1.

Applicant states that "The applied art does not teach, disclose or even suggests preparing in advance a plurality of types of third body gases whose mass numbers are

mutually different outside of the ionization chamber,selecting one type of third body gas and introducing it into the ionization chamber, determining whether interference peaks are generated and when an interference peak is generated, selecting another type of third body gas which generates no interference peak as claimed in claim 1 and similarly claimed in claims 2-8."

The applicant is respectfully directed to Kato (652), Column 6, line 54-56, which states; When a plural gas is supplied to the atmospheric pressure ion, source 7, it is not necessary to provide the by-pass pipe arrangement for all gas supply lines.

Also Column 7, line 11-20, which states; Many kinds of the gases are supplied besides the nebulization gas in the atmospheric pressure ion source 7. When stopping the measurement, all gas is not intercepted, and the gases (Bath Gas) of low flow rate does not stop, although the nebulization gas and the evaporation gas of high flow rate may stop. Thereby, consumption of the gas is reduced as much as possible, and the ion source is prevented from going to a negative pressure. Plural stop valves are provided on the plural gas feeding lines, and the problem is solved by controlling on/off conditions from the data processor.

And Column 8, line 22-41, which states;

5. A mass spectrometry apparatus as defined in claim 4, wherein said nebulization gas supply means is provided with plural gas supply systems each having said stop valve, and said by-pass passage is provided in at least one of said plural gas supply systems.

6. The mass spectrometry apparatus as defined in claim 1, wherein said

nebulization gas supply means is provided with plural gas supply systems each having said stop valve, and said by-pass passage is provided in at least one of said plural gas supply systems.

7. The mass spectrometry apparatus as defined in claim 3, wherein said nebulization gas supply means is provided with plural gas supply systems each having said stop valve, and said by-pass passage is provided in at least one of said plural gas supply systems.

As well as, Kato (490) Column 4, line 18-34, which states; Preferably, the mass spectrum measuring/analyzing method further comprises the steps of storing adduct ions (attached ions) associated with the estimated quasi-molecular ion for each cycle of mass spectrometry, determining emergence frequency for each of the stored adduct ions after repeating the mass spectrometry in a predetermined number of times, allocating weights to the plurality of adduct ion types depending on respective determined emergence frequencies, storing the weights in the adduct ion storage means, and adding the stored weights to the index values in the step of estimating a quasi-molecular ion. Thus, the ion types having high emergence frequency are automatically weighted and stored in the adduct ion storage means. Accordingly, the accuracy of mass spectrometry for the objects which are analyzed in many times by individual mass spectrum measuring/analyzing apparatus can be improved.

The examiner has interpreted from the Kato (652) and Kato (490) references above that plural gases are mixed outside the chamber, to provide desired properties, and then introduced into the ionization chamber, where mass spectra are repetitively

performed and compared to adduct (attached) ion reference data, so that desired mass peaks can be more readily resolved, as recited in the independent Claims 1-8.

Argument 2

Applicant states, that " In Kato, the mass spectrometry has no ion emitter in the ion source."

The applicant is respectfully directed to Kato (652), Column 5, line 39-67, which states; A direct current high voltage of about 3 to 6 kV supplied from a high voltage power supply (not shown in the figure) is applied to a tip edge of the nebulizer probe 4. The solution is nebulized from the tip of the probe 4 into the atmosphere of the atmospheric pressure ion source 7 as fine droplets 6 respectively having charges due to the high electric field generated in the tip neighborhood of the probe 4 by this high voltage and a nitrogen gas for nebulization. The fine droplets 6 having charges collide with the neblization gas molecules while flying in the atmosphere so that solvent at the surface of the droplet is vaporized. Therefore, the sample ions contained in the droplets finally are expelled (emitted) into the atmosphere in the atmospheric pressure ion source 7. The ions, which are generated, enter into the high vacuum part 16 evacuated by the vacuum pump 22 as an ion beam 17, from the aperture 11 for sampling the ions, through the intermediate pressure chamber 12 evacuated by the vacuum pump 23 and the aperture 14. The ions travel to the mass spectrometer 15, are mass-analyzed there, and are detected by the detector 18 so as to provide a mass spectrum or a mass chromatogram using the data processor 19.

Also in Sato (739) Column 7, line 22-25, which states; A liquid metal ion source which can produce cesium ions stably for a long time in the form of a beam focussed to a micro-spot. The liquid metal ion source is composed of a reservoir containing a liquid metal, and a needle type emitter passing through the reservoir and having a sharp tip end which protrudes from the reservoir, the liquid metal being composed primarily of a cesium compound containing 0.3-20 atom % of oxygen.

The examiner has interpreted from the Kato (652) and Sato (739) references above that metal droplets are emitted into an ion source in the presence of a high voltage field, which then collide with a sample gas facilitating ion attachment, as recited in the independent Claims 1-8.

Conclusion

8. The Amendment filed on 11-17-2003 under 37 CFR 1.131 has been considered but is ineffective to overcome the Kato (652), Kato (490) and Sato (739) references.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and

any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications should be directed to Phillip Johnston whose telephone number is (571) 272-2475. The examiner can normally be reached on Monday-Friday from 7:30 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiners supervisor John Lee can be reached at (571) 272-2477. The fax phone number for the organization where the application or proceeding is assigned is 703 872 9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PJ
June 15, 2004

JOHN R. LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800